



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,829	09/05/2003	Hidehiko Sekizawa	S1459.70062US00	8415
7590	11/25/2005			
Randy J. Pritzker Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210			EXAMINER CHANG, AUDREY Y	
			ART UNIT 2872	PAPER NUMBER

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H:A

Office Action Summary	Application No.	Applicant(s)	
	10/656,829	SEKIZAWA ET AL.	
	Examiner	Art Unit	
	Audrey Y. Chang	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remark

- This Office Action is in response to applicant's amendment filed on September 16, 2005, which has been entered into the file.
- By this amendment, the applicant has amended claims 1 and 5.
- Claims 1-9 remain pending in this application.

Response to Amendment

1. The amendment filed on **March 28, 2005** is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: **claims 1 and 5 have been amended** to include the feature for the polarized eyeglass device for use with a *plurality* of stereoscopic image display *apparatus*. The specification only gives support for the eyeglass to be used with a **single** stereoscopic image display apparatus with **different types of arrangements** for the *image* to be displayed but not for a **plurality of the apparatus**. The apparatus is referred to the actual optical element arrangements. The specification only provides the disclosure of a **single apparatus** but not a plurality of apparatus.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 2872

3. **Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

The reasons for rejection based on the newly added matters are set forth in the paragraph above.

4. **Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.**

Claims 1 and 5 have been amended significantly however the claims fail to provide an essential feature that is the necessary criterion for the apparatus to be operable. That is:

If the *phase changing plate* is placed in the **areas** that display the parallax image information for one of the **right** or **left** eye, then the polarization changing plate has to be placed at **front face** of the **polarized light separation means** at the **viewing region** used for the **other** of the left or right eye. That is to say (1) one of the polarization changing plate has to be at the **front face** of the polarized beam separation means and has to be at the viewing region for the **other** eye, (for instance left eye), **different** from the areas **with** the phase changing plates and used for displaying parallax image for of the eye, (for instance right eye). Without such specification, the apparatus will NOT BE WORKABLE.

The applicant is *respectfully requested* to study the polarization relationship set up in the cited **Rosencwaig** reference, to note the necessary condition for the phase changing plate (134, Figure 4) to be at **opposite** eye positions with respect to the polarization changing means (142) and the polarization changing means has to be at front face of the polarized light separation means (144). Currently, the claims fail to provide the essential condition for making the polarizing eyeglass capable of observing stereoscopic image.

The applicant is also respectfully noted that the condition shown in **Figure 19**, will not be workable since the 180 degrees rotation of the polarizing eyeglass device will make the polarization state of the polarized light separation means simply rotates 180 degrees and will not make it to change to an **orthogonal** polarization state which is essential for this apparatus to be workable.

Claims 3, 4, 7 and 8, also lacks the **essential criteria** for the two arrangements to be workable, namely the reversing mechanism has to make the polarization state of the polarized light separation means to be rotated by *90 degrees* with respect to the first arrangement that is to say the polarization state of the polarized light separation means has to be *orthogonal* to each other at the first and second arrangements, without such essential conditions, the apparatus will not be workable.

Claim Objections

5. **Claims 1-9 are objected to because of the following informalities:**

(1). **Claims 1-9** are being incomplete for omitting essential *structural cooperative relationships of elements*, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the polarized light separation means, the first and second polarization direction changing means. Claims 1 and 5 recite that “the second polarization direction changing means adhered to a *second face opposite* to the first face of the polarized light separation means” which makes the polarizing eyeglass device NOT workable. If the polarization direction changing means is placed **after** the light passes through the polarized light separation means (which generally is a polarizer), it really *contributes no effect* to the viewing selection. It is known that the polarization direction changing means is provided to change the direction of certain polarized light to be aligned with the polarized light selection means in order for the selected light to pass through to the observer. If the polarized light has *already* passed through the polarized light separation means, what is the point of changing its polarization direction afterwards? The scopes of the claims particularly

Art Unit: 2872

concerning the second polarization direction changing means and its logical cooperation with respect to other elements in the device are not clear and confusing.

The specification and the claims also fail to teach how could the reversing of the first and second polarization direction changing means *leftwardly* and *rightwardly* or *forwardly* and *backwardly* will make the device operable. Change order and location of the polarized light separating means and the polarization direction changing means, will change the polarization states of the image light which may make the eyeglasses not workable. In fact, by simply changing or reversing the position of the first and second polarization direction change means **will actually** make the eyeglass NOT able to see stereoscopic image display, if the order of the left eye and right eye image displayed on the image display screen is not changed accordingly or if the polarization state of the polarized light separation means does not change to orthogonal state also.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 3-4, 5 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to PCT publication by Rosencwaig (WO 95/00872).**

Rosencwaig teaches a *polarizing eyeglasses* having a pair of lenses (140, and 146, Figure 4), that is used in *stereoscopic vision system* having an *image display screen* (130) that is compressed of plurality of pixels (126 and 128) that alternatively displaying parallax image information for right eye (pixels 126)

Art Unit: 2872

and left eye (pixels 128) respectively. Rosencwaig teaches that the stereoscopic vision system further comprises a *polarizing plate* (132) placed in front of the display screen and a *birefringent retarder* (134) serves as the *phase difference plate* placed in front of the polarizing plate at the *positions* corresponding to the pixels element of (126), that are the pixel elements for displaying image information intended only for one eye, (such as right eye). The birefringent retarder (134) or the phase difference plate has the function of *rotating* or *changing* the polarization direction of the image light from pixel elements (126) by 90 degrees. Rosencwaig teaches that the polarizing eyeglass is worn by the observer to enable stereoscopic viewing, (which means that only right eye image light reaches right eye and only left eye image light reaches left eye). The polarizing eyeglasses comprises two lenses (140 and 146) that includes a *polarizer* (144 and 148) serves as the *polarized light separating means* that will only allow image light having the corrected polarization state to pass. The polarizing eyeglasses further comprises a *birefringent retarder* (142), placed at the first face of the polarized light separating means, serves as the *first polarization direction changing means* to change the polarization direction of the image light intended for the left eye so that the image light has the same polarization direction as compared to the polarized light separating means, (please see Figure 4, the abstract and pages 7-9). The polarizing eyeglass therefore allows only the right eye image light to reach the right eye and the left eye image light to reach left eye. Rosencwaig teaches that the polarization state of the polarizing plate (132) and the polarization state of the polarizing plate (144 and 146) are orthogonal to each other.

This reference has met all the limitations of the claims with the exception that it does not teach explicitly to include a second polarization direction changing means that is placed at *opposite face* of the polarized light separating means. However the claims **fail** to provide logical relationship as how does the second polarization direction changing means cooperate with other elements in the claims to make the device operable or different in operation. In fact, person with knowledge in the art would know that the second polarization direction changing means is a **redundant** element, that does not effect the

workability of the apparatus as stated in claims 1 and 5. Even the applicant of the instant application admitted the second polarization direction changing means does not effect the viewing of the image and the function of the apparatus, (please see the specification). Since the second polarization direction changing means DOES NOT effect the function of the polarizing eyeglasses in viewing the stereoscopic vision, it would have been obvious to one skilled in the art to know that by adding a **redundant** piece of element to the device does not makes any patentable difference to the prior art.

With regard to claims 3-4 and 7-8, it is implicitly true that the polarizing eyeglasses could be moved leftwardly/rightwardly or forwardly/backwardly by the hands of the observer. This reference however does not teach to have the first and second polarization direction change means changed position in a reversal relationship. However such reversing position will cause the polarizing eyeglass not able to view stereoscopic image in arrangement as oppose to the other arrangement since the polarization state of the image light works in the first arrangement will not work for the second arrangement. One skilled in the art however will realize by interchanging the left eye lenses arrangement (140) of Rosencwaig and the right eye lenses arrangement (146) **and by making the pixels rows 128 now displaying right eye image and the pixel row (126) now displaying left eye image, (i.e. reversing the image displaying order), the stereoscopic image will be observed.**

8. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT publication of Rosencwaig as applied to claims 1 and 5 above, and further in view of the patent issued to Matsuda (PN. 4,989,967).

The polarizing eyeglasses utilized in a stereoscopic vision system taught by **Rosencwaig** as described for claims 1 and 5 above has met all the limitations of the claims. This reference however does not teach explicitly to use a pair of protective layers to cover the polarized light separation means and the polarization direction changing means. However it is very common knowledge in the art to use protective

Art Unit: 2872

layer to cover the lenses of the eyeglasses as demonstrated by the teachings of **Matsuda** wherein a **protective layer** (1a, Figures 1b and 4) is used to coat the lens element. It would then have been obvious to one skilled in the art to use protective layers to coat the polarizing eyeglasses for the benefit of protecting it from environmental damages.

Response to Arguments

9. Applicant's arguments filed on September 16, 2005 have been fully considered but they are not persuasive. The amendments to the claims have been fully considered and are rejected for the reason stated above.

In response to applicant's arguments which state that it is not an obvious matters of design choice to add a second polarization direction changing means for it allows the polarizing eyeglass to be used with *a plurality of* stereoscopic display apparatus, the examiner respectfully disagrees for the reasons stated below. It is not clear in **what way** does this **redundant** element which has no function in making the apparatus workable, (even the applicant admits in the specification that this element does contribute to make the apparatus workable) to allow the polarization eyeglass workable in a plurality of stereoscopic display apparatus. Furthermore, when does a **redundant** element provides **patentable** distinction to prior art references. The applicant is respectfully advised to consider more closely the critical feature of having this second polarization direction changing means and to properly state them in the claims. At this juncture, the apparatus defined by claims 1 and 5, and their respective dependent claims, does not require this second polarization direction changing means to present.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2872

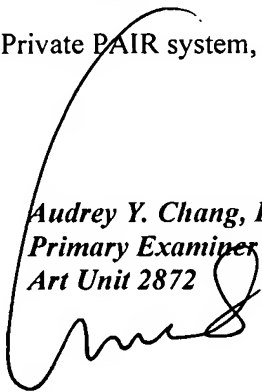
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang, Ph.D.
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.